

An aerial photograph of a large-scale stone quarry and processing facility. The site is situated in a wooded area, with a dense forest of evergreen trees surrounding the cleared land. The quarry floor is a mix of dark, wet stone and lighter-colored dirt and gravel. Numerous large, rectangular stone blocks are visible, some stacked in neat piles and others being processed. Several pieces of heavy machinery, including excavators and trucks, are scattered throughout the site. A small, light-colored building is visible on the right side of the image. The overall scene depicts a busy industrial operation in a natural setting.

Specifying Sustainable Stone: A Guide to Helping Owners Get What They Want

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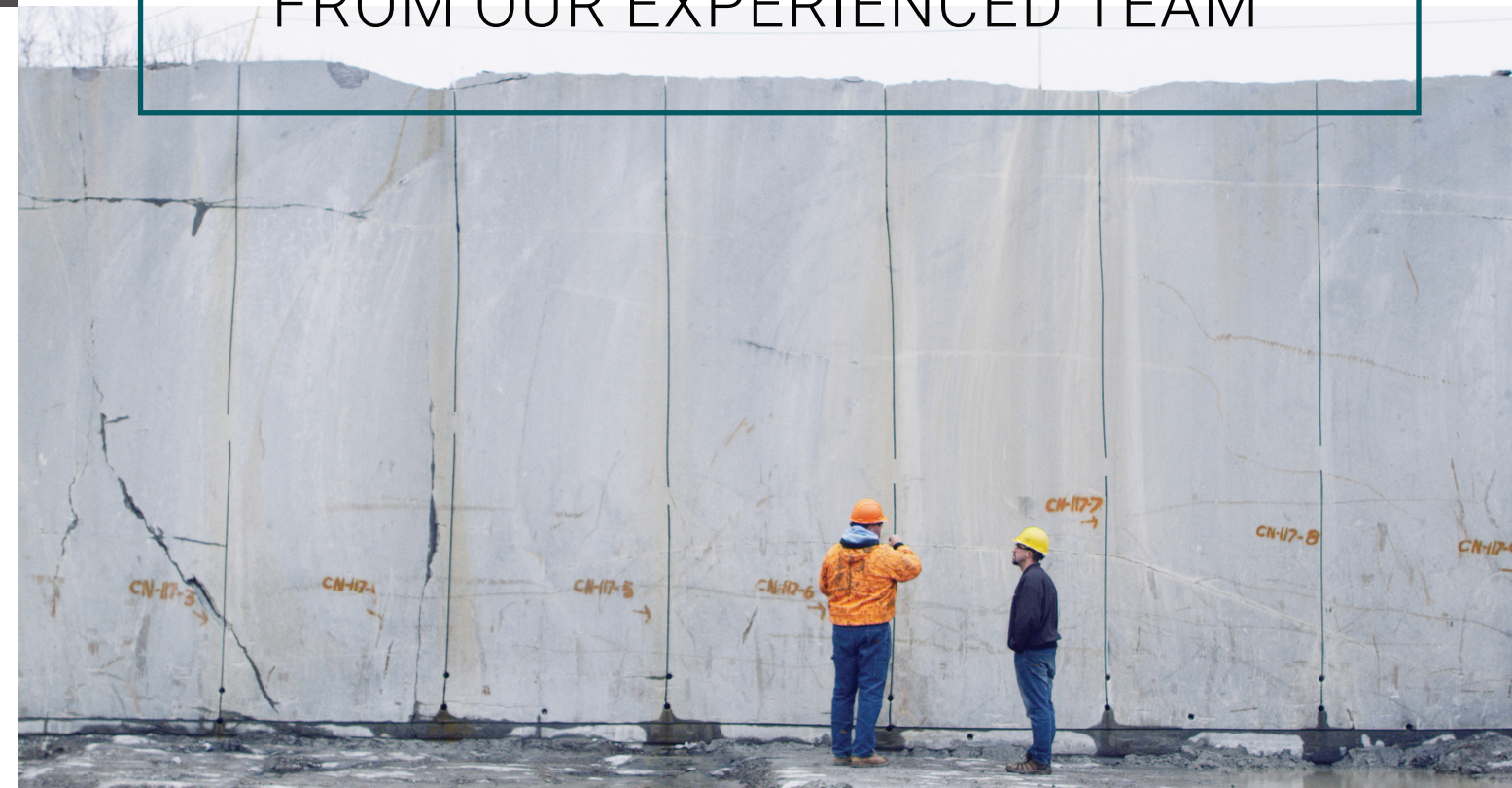
When a specifier has a design goal in mind that includes granite, and particularly sustainably sourced and produced granite, it's important for both the owner and design team to be clear on how the products being specified will help them achieve their intended objectives. If the specification is too general, often times other members of the building team will value-engineer other products as substitutes. If that happens, in the end, the owner may not have a product that meets the intended design goals.

CLEARLY IDENTIFYING THE ITEMS THAT ARE IMPORTANT TO BOTH YOU AND THE OWNER IS CRITICAL.

Conversations early on in the project design process can help ensure the specification you write is clear and the products remain on the project. While green building programs are typically helpful in managing information, you do not need to adhere to a specific program to have a sustainable project with environmentally responsible products.

A specification can be written any way the writer wants. But a good specification ensures the right product gets on the job. So how can design teams write to ensure sustainable stone ends up on the project?

HERE ARE SOME SUGGESTIONS FROM OUR EXPERIENCED TEAM





LIST GOALS

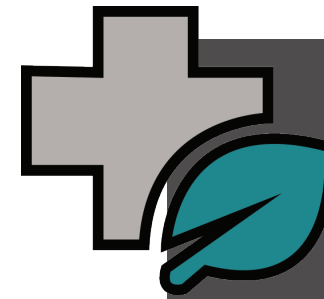
Goals are often not included in specs, but they're vitally important to the outcome and the owner getting what he or she wants. Writing a Goals or Objectives section at the beginning of the specification document is the best way to make sure everyone on the project team understands the types of products that align with the project. An example of how to write a goal into your specification can be as simple and concise as the following:

An example of how goals can be written in your specification include:

The goals of the Granite Paving System are to:

- Construct a high quality granite pavement system to reduce long-term maintenance requirements that will last for 30 years
- Must meet sustainability goals as outlined by owners 2025 initiative
- Increase safety through improved granite paver surface friction, skid, and slip resistance

When you have clearly identified the sustainability goals of the project, the products and details that you specify carry more weight in reaching the overarching objective of the project. The following are some examples of areas that may be important on a project you are working on, as well as tips for specification language you can use to ensure the right products are used on your project.



UNDERSTAND MATERIAL HEALTH

If Material Health is important to you and the project owner, consider writing transparency documentation into your specification to ensure the products you are using have fully disclosed their ingredients. While this step may seem unnecessary since natural stone is an inherently clean product, in today's environment it is still key to verify. Many products on the market position themselves as "natural" products, even some aligned with stone. **Seeking transparency documentation can help ensure the stone you are specifying is actually natural material.** Programs such as the Declare Label or Health Product Declarations (HPD's) do a great job of disclosing ingredients of products to ensure you know how the product is being made. Specifically calling for Red List Free products is a way to ensure the product is free of harsh chemicals.

An example of how simply this could be written into your specification includes:

"NATURAL STONE CLADDING MATERIAL MUST DISCLOSE A RED LIST FREE DECLARE LABEL"

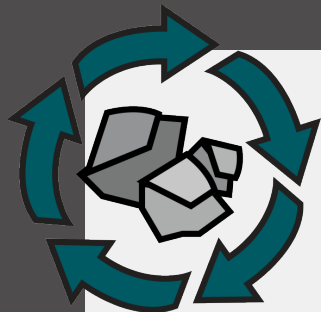
Declare.

Coldspring Dimensional Granite
Coldspring

Final Assembly: Cold Spring, Minnesota, USA
Life Expectancy: 100+ Years
End of Life Options: Take Back Program, Salvageable/
Reusable in its Entirety, Recyclable (100%)

Ingredients:
Dimensional Granite: Natural Stone

Living Building Challenge Criteria:
ESS-5009: ☒ LBC Red List Free
VOC Content: N/A ☒ LBC Compliant
VOC Emissions: CDPH Compliant
Declaration Status: ☒ Declared
Exp: 01 OCT 2020
TRANSFORMER RESPONSIBLE & SOCIAL ACCURACY
INTERNATIONAL LIVING FUTURE INSTITUTE™ declareproducts.com



ENSURE DURABILITY & LIFE CYCLE

When **Durability or Life Cycle of a project** is the end goal, consider writing specs to describe the stone's **Physical Properties**.

Durability is one aspect of a sustainable product. Granite and other natural stones will last for the project's entire life cycle with minimal maintenance if appropriate physical properties are considered. Replacement and maintenance costs are a critical consideration for owners which makes this factor that much more important.

Consider writing specific ASTM requirements into your specification and know when it is appropriate to go beyond generic ASTM recommendations.

Example language that you can use when writing to ASTM testing includes:

IF CONTRACTOR PROPOSES ALTERNATIVE GRANITE TYPES, CONTRACTOR SHALL PROVIDE TEST DATA NOT OLDER THAN 30 DAYS TO VERIFY THAT THE GRANITE MEETS OR EXCEEDS THE FOLLOWING REQUIREMENTS:

TABLE 11-1 GRANITE PAVER TECHNICAL SPECIFICATIONS

Physical Property	Test Method	Test Requirement
Compressive Strength	ASTM C 170	19,000 psi min.
Flexural Strength	ASTM C 880	1,200 psi min.
Modules of Rupture	ASTM C 99	1,500 psi min.
Density	ASTM C 97	160 lb/ft3 min.
Absorption	ASTM C 97	0.2% max. by weight
Abrasion Resistance	ASTM C 1353	40 HA min.
Split Resistance	ASTM E 303	45 min. wet Pendulum Test Value (PTV)

THE ASTM MINIMUM IS 0.4% BUT THIS PROJECT
WENT BEYOND TO 0.2%

WHY?

Just because the stone meets the ASTM absorption requirements, doesn't mean it is the best stone for the particular application and environment. Going to a stronger threshold helps ensure a quality performance and a longer life cycle for the project.

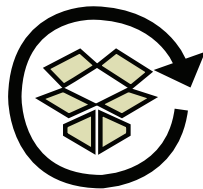
CONSULT WITH THE STONE MANUFACTURER ABOUT THE ENVIRONMENT AND APPLICATION TO ENSURE THE CORRECT STONE (WITH THE CORRECT ABSORPTION RATE AND PHYSICAL PROPERTIES) IS SPECIFIED FOR THE MOST DURABLE OUTCOME.



CONSIDER SUSTAINABLE SOURCING EXTRACTION AND/OR PRODUCTION PROCESSES

If sustainable production practices are important to you on your project, clearly detail in your specification that the materials are verified by a third-party standard. The most general example to ensure your natural stone is sustainably extracted and processed is to specify the Natural Stone Sustainability Standard.

THIS THIRD-PARTY VERIFIED STANDARD COVERS ALL THE MAJOR ELEMENTS
OF A SUSTAINABLE PRACTICE SUCH AS:



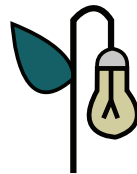
**SOLID WASTE &
EXCESS PROCESS**



SITE IMPACTS



WATER



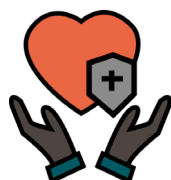
**CARBON &
ENERGY**



**CORPORATE SOCIAL
RESPONSIBILITY**



CHEMICALS



**HUMAN HEALTH &
SAFETY**



LAND RECLAMATION



**CHAIN OF CUSTODY &
TRANSPORTATION**

You can specify to certain levels of certification or keep your specification generic to any natural stone provider certified to the standard at the quarry and/or fabrication facility level.

An example of how that could be written into your specification is noted below:

The granite paver materials, colors, and surface textures shall comply with the following:

Materials

All granite paver materials shall be composed of natural granite stone sourced from quarries within North America and shall meet the requirements of National Stone Council/American National Standards Institute (NSC/ANSI) 373 Sustainable Production of Natural Dimension Stone.

If key elements of the sourcing or production process are important, you can more specifically state those examples as well. For example, the specification language noted above also speaks to domestic material, ensuring the stone comes from within the United States. This helps reduce the carbon footprint and minimizes the project's impact to the environment.

If ethical supply chain and fair labor practices are important to you and the owner's vision, consider writing in a required Chain of Custody (COC). The Natural Stone Sustainability Standard verifies key corporate governance practices such as prohibitions of forced labor and child labor. The companion Chain of Custody standard further elevates the process by tracing and verifying the stone travels a sustainable path from the quarry to processing and through the supply chain, ultimately to its journey's end. Each organization handling the stones at any step along the way must be COC certified, conforming to the COC standard, for the stone to retain certification.

Example language to include in your specification could be:

**"GRANITE MUST BE SOURCED FROM AND FABRICATED BY SUPPLIERS
CERTIFIED TO NATURAL STONE SUSTAINABILITY STANDARD (ANSI/
NSC 373), INCLUDING THE COMPANION CHAIN OF CUSTODY"**



ALIGN TO GREEN BUILDING PROGRAMS

If your project is certifying to a green building program such as USGBC’s LEED v4 or ILFI’s LBC 3.1, there are tremendous requirements to ensure those objectives are met. When it comes to natural stone, understanding how the material can help contribute to points is key. Writing language into your specification calling for the Natural Stone Sustainability Standard (ANSI/NSC 373)



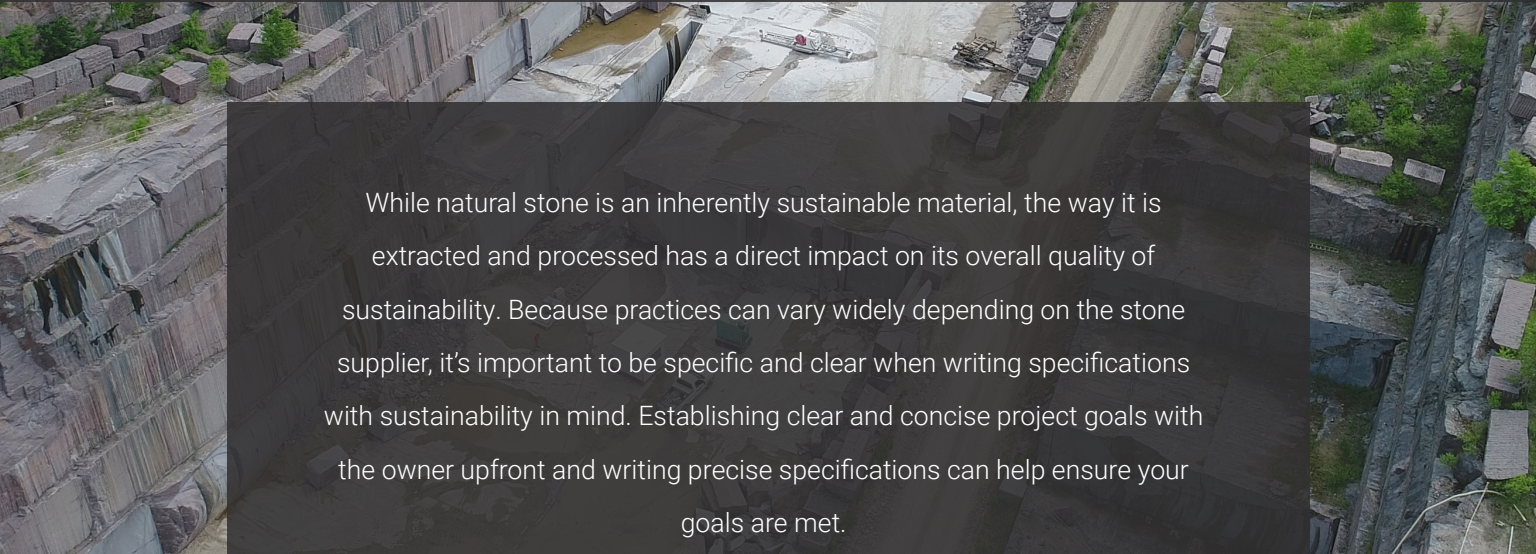
certified material and/or a Declare Label can help ensure the product contributes to points on your project. The Natural Stone Sustainability Standard and the Declare label both tie directly into both green building programs in two key areas:

DECLARE LABEL	<div><div>LEED V4</div><div>Material Ingredient Reporting</div></div>	<div><div>LBC 3.1</div><div>Material Petal Responsible Industry</div></div>
	<div><div>LEED V4</div><div>Material and Resources Building Product Disclosure & Optimization Sourcing of Raw Material</div></div>	<div><div>LBC 3.1</div><div>Material Petal Responsible Industry</div></div>

Example language to include in your specification could include:
“GRANITE MUST BE SOURCED FROM AND FABRICATED BY SUPPLIERS CERTIFIED TO NATURAL STONE SUSTAINABILITY STANDARD (ANSI/NSC 373), TO ENSURE CRITERIA IS MET FOR SOURCING OF RAW MATERIAL UNDER LEED V4”



WITH CLEAR SPECIFICATIONS, NATURAL STONE CAN HELP MEET SUSTAINABILITY GOALS RELATED TO: MATERIAL HEALTH, DURABILITY, SUSTAINABLE SOURCING, AND SPECIFIC GREEN BUILDING PROGRAMS.



While natural stone is an inherently sustainable material, the way it is extracted and processed has a direct impact on its overall quality of sustainability. Because practices can vary widely depending on the stone supplier, it’s important to be specific and clear when writing specifications with sustainability in mind. Establishing clear and concise project goals with the owner upfront and writing precise specifications can help ensure your goals are met.

Certified by the Natural Stone Sustainability Standard, Coldspring can help you achieve your sustainability goals, whether they’re related to material health, product durability and life cycle, sustainable extraction and production processes, or green building programs.

Consult with your Coldspring Sales Representative for transparency documentation and support with strong specification language to ensure your next project meets the design and performance goals you and the owner have in mind. The end result will be a beautiful project that’s kind to the earth and our future generations.



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